IN THE CLAIMS:

1. (Currently Amended) A method of connecting threaded tubular members for use in a wellbore, comprising:

rotating a first threaded tubular member relative to a second threaded tubular member, wherein the two threaded members define a shoulder seal;

detecting a shoulder condition during rotation of the first threaded tubular member by calculating and monitoring a rate of change in torque with respect to rotation;

determining acceptability of the threaded connection; and

stopping rotation of the first threaded member when reaching a predefined rotation value from the shoulder condition.

2. (Canceled)

3. (Previously Presented) The method of claim 1, further comprising measuring torque and rotation at regular intervals.

4. (Canceled)

5. (Previously Presented) The method of claim 1, wherein the shoulder condition occurs when surfaces of the threaded members forming the shoulder seal engage.

6. (Previously Presented) The method of claim 1, wherein the predefined rotation value is selected according to geometry of the threaded members.

7. (Previously Presented) The method of claim 1, further comprising measuring relaxation rotation of the first threaded tubular member.

8. (Previously Presented) The method of claim 7, wherein acceptability is determined by comparing the measured relaxation rotation to a predetermined relaxation rotation.

9. (Previously Presented) The method of claim 1, further comprising measuring torque and rotation at regular intervals; and detecting a seal condition.

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Previously Presented) The method of claim 3, wherein acceptability is determined using a value measured at the shoulder condition.

14. (Original) The method of claim 13, wherein the measured value is a torque value.

15. (Original) The method of claim 13, wherein the measured value is a rotation value.

16. (Previously Presented) The method of claim 14, further comprising calculating a target rotation value based on the shoulder condition irrespective of a maximum torque limit.

17. (Previously Presented) The method of claim 15, further comprising calculating a target rotation value based on the shoulder condition irrespective of a maximum torque limit.

18. (Previously Presented) The method of claim 3, further comprising detecting a seal condition, wherein acceptability is determined using a change in value between a value measured at the shoulder condition and a value measured at the seal condition.

19. (Original) The method of claim 18, wherein the measured values are torque values.

20. (Original) The method of claim 18, wherein the measured values are rotation values.

21. (Previously Presented) The method of claim 18, wherein the measured values are torque and rotation values.

22. (Canceled)

23. (Canceled)

24. (Currently Amended) A system for connecting threaded tubular members for use in a wellbore, comprising:

a power drive unit operable to rotate a first threaded tubular member relative to a second threaded tubular member;

a power drive control system operably connected to the power drive unit, and comprising:

a torque detector;

a turns detector; and

a computer receiving torque measurements taken by the torque detector and rotation measurements taken by the turns detector; wherein the computer is configured to perform an operation, comprising:

rotating the first threaded tubular member relative to the second threaded tubular member, wherein the two threaded members define a shoulder seal;

detecting a shoulder condition during rotation of the first threaded tubular member by calculating and monitoring a rate of change in torque with respect to rotation;

determining acceptability of the threaded connection; and

stopping rotation of the first threaded member when reaching a predefined rotation value from the shoulder condition.

25. (Original) The system of claim 24, wherein the power drive unit is a power tongs unit and the power drive control system is a power tongs control system.

26. (Original) The system of claim 24, wherein the power drive unit is a top drive unit and the power drive control system is a top drive control system.

27. (Canceled)

28. (Previously Presented) The system of claim 24, wherein the computer comprises a target value calculator for calculating a target rotation value by adding the predefined rotation value to a measured rotation value corresponding to the detected shoulder condition.

29. (Original) The system of claim 24, wherein the predefined value is selected according to geometry of the threaded members.

30. (Original) The system of claim 24, further comprising a database and the operation further comprises collecting data on a threaded connection between the two threaded members and storing the data in the database.

31. (Original) The system of claim 30, wherein the operation further comprises calculating a new predetermined value by statistically analyzing the data in the database.

32. (Original) The system of claim 24, wherein the operation further comprises calculating the predefined value according to statistical analysis of data collected from previous connections.

33. (Previously Presented) The system of claim 24, wherein the operation further comprises measuring relaxation rotation of the first threaded member.

34. (Previously Presented) The system of claim 33, wherein acceptability is determined by comparing the measured relaxation rotation to a predetermined relaxation rotation.

35. (Previously Presented) The system of claim 24, wherein the operation further comprises issuing a dump signal to stop rotation of the first threaded member before reaching the predefined value from the shoulder condition so that the relative rotation of the first threaded member is stopped when reaching the predefined value from the shoulder condition.

36. (Previously Presented) The system of claim 26, wherein the top drive comprises a gripping member coupled to an inside of the first threaded member.

37. (Original) The system of claim 26, wherein the top drive comprises a torque head coupled to an outside of the first threaded member.

38. (Original) The system of claim 26, wherein the operation further comprises lowering the two threaded members together after reaching the predefined value.

39. (Original) The system of claim 38, wherein the two threaded members are casing and lowering the threaded members comprises rotating and lowering the threaded members while simultaneously injecting drilling fluid into the threaded members to drill a wellbore.

40. (Previously Presented) The system of claim 24, wherein acceptability is determined using at least one of a measured torque value and a measured rotation value both corresponding to the detected shoulder condition.

41. (Original) The system of claim 40, wherein the at least one measured value is torque.

42. (Original) The system of claim 40, wherein the at least one measured value is rotation.

43. (Original) The system of claim 40, wherein the at least one measured value is rotation and torque.

44. (Previously Presented) The system of claim 40, wherein the computer further comprises an event detector configured to detect the shoulder condition.

45. (Previously Presented) The system of claim 24, wherein the operation further comprises detecting a seal condition and acceptability is determined using a change in value between a value measured at the shoulder condition and a value measured at the seal condition.

46. (Currently Amended) The system of claim 24, wherein acceptability is determined by comparing the rate of change of torque with respect to rotation after detecting the shoulder condition to a predetermined rate.

47. (Previously Presented) The system of claim 24, wherein acceptability is determined using at least one member selected from a group consisting of:

a torque and/or rotation value measured at a seal condition;

a torque and/or rotation value measured at the shoulder condition;

a change in value between the torque and/or rotation value measured at the shoulder condition and the torque and/or rotation value measured at the seal condition;

a relaxation rotation; and

the rate of change of torque with respect to rotation after detecting the shoulder condition.

48. (Previously Presented) The system of claim 47, wherein acceptability is determined using two or more members selected from the group.

49. (Previously Presented) The system of claim 47, wherein acceptability is determined using three or more members selected from the group.

50. (Previously Presented) The system of claim 47, wherein acceptability is determined using four or more members selected from the group.

51. (Previously Presented) The system of claim 47, wherein acceptability is determined using all five members selected from the group.

52. (Previously Presented) The system of claim 24, further comprising detecting a seal condition during rotation of the first threaded tubular member by calculating and monitoring the rate of change in torque with respect to rotation.

53. (Previously Presented) The method of claim 52, wherein acceptability is determined using a torque and/or rotation value measured at the seal condition.

54. (Currently Amended) The method of claim 1, wherein acceptability is determined by comparing the rate of change of torque with respect to rotation after detecting the shoulder condition to a predetermined rate.

55. (Previously Presented) The method of claim 1, wherein acceptability is determined using at least one member selected from a group consisting of:

a torque and/or rotation value measured at a seal condition;

a torque and/or rotation value measured at the shoulder condition;

a change in value between the torque and/or rotation value measured at the shoulder condition and the torque and/or rotation value measured at the seal condition;

a relaxation rotation; and

the rate of change of torque with respect to rotation after detecting the shoulder condition.

56. (Previously Presented) The method of claim 55, wherein acceptability is determined using two or more members selected from the group.

57. (Previously Presented) The method of claim 55, wherein acceptability is determined using three or more members selected from the group.

58. (Previously Presented) The method of claim 55, wherein acceptability is determined using four or more members selected from the group.

59. (Previously Presented) The method of claim 55, wherein acceptability is determined using all five members selected from the group.

60. (Previously Presented) The method of claim 1, further comprising detecting a seal condition during rotation of the first threaded tubular member by calculating and monitoring the rate of change in torque with respect to rotation.

61. (Previously Presented) The method of claim 60, wherein acceptability is determined using a torque and/or rotation value measured at the seal condition.